

What is claimed is:

1. A plasma display device comprising:
  - a first substrate;
  - 5 a second substrate disposed facing an inside of said first substrate and forming a hermetically sealed discharge space therebetween;
  - at least a pair of discharge sustain electrodes formed inside said first substrate and mutually forming a discharge
  - 10 gap; and
  - a dielectric layer formed inside said first substrate so as to cover said discharge sustain electrodes; wherein
  - said dielectric layer has a low degassing film in which a total amount of degassing when increasing a temperature from
  - 15 room temperature to 1000 °C comprises hydrogen molecules not exceeding  $1 \times 10^{20}$  particles/cm<sup>3</sup> and water molecules not exceeding  $5 \times 10^{20}$  particles/cm<sup>3</sup>.
2. The plasma display device according to Claim 1 wherein
- 20 a thickness of said dielectric layer does not exceed  $5.0 \times 10^{-5}$ m.
3. The plasma display device according to any of Claims 1 and 2, wherein on said second substrate side there is formed a plurality of address electrodes along a direction which crosses
- 25 with said discharge sustain electrodes; and there is formed a second substrate side dielectric layer.
4. The plasma display device according to Claim 3, wherein said second substrate side dielectric layer has a low degassing
- 30 film in which a total amount of degassing when increasing a temperature from room temperature to 1000 °C comprises

hydrogen molecules not exceeding  $1 \times 10^{20}$  particles/cm<sup>3</sup> and water molecules not exceeding  $5 \times 10^{20}$  particles/cm<sup>3</sup>.

5. The plasma display device according to any of Claims 1 to 4, wherein said low degassing film has a low degassing film in which a total amount of degassing when increasing a temperature from room temperature to 500 °C comprises hydrogen molecules not exceeding  $5 \times 10^{19}$  particles/cm<sup>3</sup> and water molecules not exceeding  $5 \times 10^{19}$  particles/cm<sup>3</sup>.

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6. The plasma display device according to any of Claims 1 to 5, wherein said low degassing film comprises one of an oxide, a nitride and an oxynitride.

15 7. The plasma display device according to any of Claims 1 to 6, wherein there is formed a protective film on an internal surface facing a discharge space of said dielectric layer.

8. A plasma display device manufacturing method for manufacturing a plasma display device according to any of Claims 1 to 7, wherein said low degassing film is formed by one of a chemical vapor deposition method, a sputtering method, an evaporation method, an ion plating method, a printing method, a dry film method, an application method and a transfer method.

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9. The plasma display device manufacturing method according to Claim 8, wherein said low degassing film has a substrate temperature of 30 °C or more, when formed by the chemical vapor deposition method.

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10. The plasma display device manufacturing method according to Claim 8, wherein said low degassing film has a partial pressure of oxygen of 15 volume percent or more, when formed by the sputtering method.

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